Notice of Allowability	Application No.	Applicant(s)	
	09/923,001	YOUNIS, SAED	
	Examiner	Art Unit	
	Ted M. Wang	2634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *10/27/2005*.

2. ☒ The allowed claim(s) is/are *17,18 and 23-34*.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All b) ☐ Some* c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____.
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date *11/21/2005*.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

DETAILED ACTION

Examiner Amendments

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

2. Authorization for this examiner's amendment was given in a telephone interview with Applicant's representative Andrea Mays on November 21, 2005.

3. The application has been amended as follows:

In the claims:

- Claim 17, line 12, after "transmission time" insert --- ; and

  offsetting a relative timing of the signal transmitted from the base station with respect to a reference signal at a point of generation of the signal transmitted from the base station to determine a timing at the transmission antenna of the signal transmitted from the base station with respect to the reference signal ---.
- Cancel Claim 19.
- Add the following new claims.

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  23. (new) The method of claim 17 wherein offsetting a relative timing of the signal transmitted from the base station with respect to a reference signal comprises:

determining the relative timing of a pilot signal transmitted by the base station with respect to a timing reference signal, comprising:

generating a reference CDMA pilot signal on the same carrier frequency on which the pilot signal is generated by the base station, the reference CDMA pilot signal having a known timing relationship to the timing reference signal;

locking the frequency of the reference CDMA pilot signal and the timing reference signal to a common frequency reference;

combining the reference CDMA pilot signal the pilot signal generated by the base station; and

determining the time offset between the reference CDMA pilot signal and the pilot signal generated by the base station.

24. (new) The method of claim 23, wherein the timing difference between the reference CDMA pilot signal and the pilot signal generated by the base station is determined using a mobile device having a pilot searcher.

25. (new) The method of claim 23, wherein the reference CDMA pilot signal is generated by a base station simulator.

26. (new) The method of claim 23, wherein the timing reference signal is a signal indicating the GPS time clock 1 PPS tick.

27. (new) The method of claim 23, wherein the common frequency reference is a 10 MHz output from a GPS receiver.

28. (new) The method of claim 23, wherein the timing reference signal is generated by the GPS receiver.

29. (new) The method of claim 23, wherein the combining of the reference CDMA pilot signal and the pilot signal generated by the base station is an RF combining.

30. (new) The method of claim 17 wherein offsetting a relative timing of the signal transmitted from the base station with respect to a reference signal comprises:

determining the relative timing of a pilot signal with respect to a timing reference signal, the pilot signal being generated by the base station and transmitted through a transmission antenna, comprising:

receiving the pilot signal generated by the base station in a pilot signal receiver having an antenna, the transmission delay between the antenna of the receiver and the transmission antenna of the base station being known;

storing the received pilot signal;

calibrating the delay from the antenna of the receiver to a digitizing converter;

triggering the reception and storage of the pilot signal with a signal based upon a known timing relationship with the timing reference signal; and

processing the stored data to determine the relationship between the received signal and the timing reference signal.

31. (new) The method of claim 30, wherein the received pilot signal is digitized prior to being stored.

32. (new) The method of claim 30, wherein the timing reference signal is a signal indicating the GPS time clock 1 PPS tick.

33. (new) The method of claim 32, wherein the reception and storage of the received signal is triggered at a known time with respect to the GPS time clock 1 PPS tick.

34. (new) The method of claim 32, wherein the reception and storage of the received signal is triggered at the GPS time clock 1 PPS tick.

Allowable Subject Matter

4. Claims 17, 18, 23-34 are allowed.

5. The following is an examiner's statement of reasons for allowance.

- The prior art fails to teach an apparatus of Claims 17 that specifically comprises the following:

  -- The instant application is deemed to be directed to a non-obvious improvement over the admitted prior art of the instant application and the invention patented in Pat. No. US 6,275,705, US 6,173,005, US 6,094,562, and US 5,875,402. The improvement comprises that offsetting a relative timing of the signal transmitted from the base station with

respect to a reference signal at a point of generation of the signal transmitted from the base station to determine a timing at the transmission antenna of the signal transmitted from the base station with respect to the reference signal as recited.

6. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

7. Reference(s) US 6,094,562 and US 6,658,258 are cited because they are put pertinent to the Timing compensation for distant base station antennas in telecommunication systems. However, none of references teach detailed connection as recited in claim.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ted M. Wang whose telephone number is (571) 272-3053. The examiner can normally be reached on M-F, 7:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on (571) 272-3056. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at (866) 217-9197 (toll-free).

Ted M Wang

Examiner

Art Unit 2634

Ted M. Wang

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